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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/889,094 | 10/19/2001 | Andreas Bergmann | 2582.022 | 7928 |

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| EXAMINER |
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PAK, MICHAEL D

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1646

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| MAIL DATE | DELIVERY MODE |
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02/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/889,094

Applicant(s)

BERGMANN ET AL.

Examiner

Michael Pak

Art Unit

1646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-13 is/are pending in the application.
- 4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 7, 8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed August 22, 2008, have been fully considered but they are not found persuasive.
2. Claims 1-6 have been cancelled. Claims 11-13 are withdrawn. Claims 7-10 are examined below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Rapoport et al. (US 6,747,139).

The reason for the rejection has been set forth in the previous office action.

Rapoport et al. disclose monoclonal antibodies against hTSH receptor which inherently block TSH (columns 15-19). The hTSH receptor comprises the FDSH sequences (sequence listings).

Applicants argue that Rapoport et al. does not disclose the answer to questions on column 4, lines 19-26, and argue that inherency argument goes astray because Rapoport et al. does not disclose an antibody that blocks binding to TSH or to the receptor nor specifically recognizes/binds the FDSH epitope. However, not identifying the epitope region for binding does not preclude the antibody that block the binding of TSH to receptor. As discussed in Rapoport et al. in column 4, lines 5-18, the extracellular domains of the receptors are important for binding the seven transmembrane domain containing G-protein receptors. This is because the seven transmembrane domains are associated with the hydrophobic membrane of the cell as well the folding pocket of the protein. The antibody against the receptor will inherently block the binding of receptor to TSH since the steric hindrance will block the access of the TSH to the receptor. With regard to specifically recognizes or bind the FDSH Epitope, it should be noted that claims are more broadly limited by "recognize a short peptide sequence of the hTSH receptor which comprises the amino acids FDSH..." The term "recognizes" is not defined to mean specifically binding and can be broadly interpreted to include collision by electrostatic interaction, hydrogen binding or non-

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specific binding. The antibody generated against the TSH receptor will recognize the receptor and the receptor comprises the FDSH sequence.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapoport et al. (US 6,747,139) as applied to claim 7-8 above, and further in view of Vandembark (US 5,614,192).

The reason for the rejection has been set forth in the previous office action.

Teachings of Rapoport et al. is discussed above. Rapoport et al. does not teach humanized antibodies.

Vandenbark disclose and teach humanized antibodies (columns 23-24).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the monoclonal antibodies of Rapoport et al. to humanize the antibody using the teachings of Vandenbark. One of ordinary skill in the art would have been motivated to make the humanized antibody because Rapoport et al. teach the importance of antibodies for treatment of Graves' disease and the humanized antibodies would provide the optimal product for such treatment. The humanizing of antibodies is an art well known to one of ordinary skill in the art and expectation of success is extremely high.

Applicants argue that Rapoport et al. does not apply as discussed in the 35 USC 102 rejection because Rapoport et al. does not disclose an antibody that blocks binding to TSH or to the receptor nor specifically recognizes/binds the FDSH epitope. However, not identifying the epitope region for binding does not preclude the antibody that block the binding of TSH to receptor. As discussed in Rapoport et al. in column 4, lines 5-18, the extracellular domains of the receptors are important for binding the seven transmembrane domain containing G-protein receptors. This is because the seven transmembrane domains are associated with the hydrophobic membrane of the cell as well the folding pocket of the protein. The antibody against the receptor will inherently block the binding of receptor to TSH since the steric hindrance will block the access of the TSH to the receptor. With regard to specifically recognizes or bind the FDSH

Epitope, it should be noted that claims are more broadly limited by "recognize a short peptide sequence of the hTSH receptor which comprises the amino acids FDSH..." The term "recognizes" is not defined to mean specifically binding and can be broadly interpreted to include collision by electrostatic interaction, hydrogen binding or non-specific binding. The antibody generated against the TSH receptor will recognize the receptor and the receptor comprises the FDSH sequence.

Applicants argue that teachings of Vandenmark fails to teach the significance of the FDSH sequence of the hTSH receptor. However, as discussed above, the claim term "recognizes" is not defined to mean specifically binding and can be broadly interpreted to include collision by electrostatic interaction, hydrogen binding or non-specific binding. The antibody generated against the TSH receptor inherently recognize the receptor and the receptor comprises the FDSH sequence. The antibody is directed against hTSH which comprises the FDSH sequence of the TSH receptor. Thus the antibody inherently has the ability to recognize FDSH.

5. Claim 9 is allowed.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pak whose telephone number is 571-272-0879. The examiner can normally be reached on 8:00 - 2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol can be reached on 571-272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Michael Pak/

Primary Examiner, Art Unit 1646

28 January 2009